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ABSTRACT

5 A low volume, high capacity latent heat storage device is achieved in a construction including a salt case (12) with an optional outer jacket (10) surrounding the salt case (12) in spaced relation thereto to define an insulating space (14) between the two. Inlet and outlet conduits (38), (42), (44), (46), extend from the exterior of the outer jacket (10) to the interior of the salt case (12) and at least one tube (20) is located within the salt case and has a plurality of straight, parallel runs (21) defining a matrix with an exterior and a phase change material is sealed within the tube (20). The tube runs (21) inwardly of the matrix exterior are in a regular or equilateral polygonal pattern with each run (21) abutting a plurality of adjacent runs (21) and each run (21) at the exterior of the matrix additionally engaging the salt jacket (12). The runs (21) have cross-sectional shapes such that flow spaces (102, 104) exist between the runs (21) and between the salt jacket (12) as well between adjacent runs (21). The flow spaces (102), (104) are in fluid communication with the inlet and outlet conduits (38), (42), (44), (46).